

REMARKS

Upon entry of the present amendment, claims 1, 6-8, 25-27 and 30-32 will be canceled without prejudice or disclaimer of the subject matter recited therein; claims 2-5, 9-14, 17, 18, 21, 23 and 24 will be amended, and claims 34-37 will be added, whereby claims 2-5, 9-24, 28, 29 and 33-37 will remain pending.

Support for the amendments to the claims appears in Applicants' originally filed application, including the originally presented claims and the specification at page 6, lines 21-22, and page 17, beginning at line 30.

Moreover, the spelling of DNA has been corrected in the specification.

Reconsideration of allowance of the application in view of the following remarks are respectfully requested.

Information Disclosure Statements

Applicants express appreciation for the inclusion with the Office Action of an initialed copy of the Form PTO-1449 submitted with Applicants' Information Disclosure Statement, whereby the Examiner's consideration of the Information Disclosure Statement is of record.

Applicants are submitting on even date herewith a Supplemental Information Disclosure Statement. The Examiner is requested to confirm consideration of the Supplemental Information Disclosure Statement by forwarding an initialed copy of the form submitted therewith with the next communication from the Patent and Trademark Office.

Claim of Foreign Priority

Applicants also express appreciation for the acknowledgement of the claim of foreign priority and receipt of the certified copy in this national stage application.

Response To Rejection Under 35 U.S.C. 112, Second Paragraph

In response to the rejection of claims 1-33 under 35 U.S.C. 112, second paragraph as being indefinite, Applicants respectfully submit the following.

Applicants submit that the claims pending prior to the present amendment clearly and definitely recite Applicants' subject matter. However, in an attempt to advance prosecution of the application the claims have been revised to avoid the language questioned in the rejection.

Accordingly, this ground of rejection should be withdrawn.

Response To Art Based Rejections

The following rejections are set forth in the Office Action.

(a) Claims 1-5 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Yurow.

(b) Claims 1, 2, 5 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Witz (U.S. Patent No. 3,595,081).

(c) Claims 3, 4, 6-11 and 13-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witz, as applied to claims 1, 2, 5 and 12, and further in view of Spiekermann (DE 19633808), Weber and Bryne (U.S. Patent No. 5,770,116).

In response to these grounds of rejection, Applicants submit that neither of Yurow or Witz taken alone or Witz in view of Spiekermann, Weber and Bryne teaches or suggests the subject matter recited in Applicants' claims.

Yurow discloses preparation of a luminol solution which comprises a 0.2 ml solution of 0.0025 mol/l + NaOH 0.2 mol/l. Yurow also discloses preparation of a hydrogen peroxide solution which comprises 0.2 ml of H₂O₂ 0.3 % that is 0.2 ml of H₂O₂ 88 mmol/l. Yurow further discloses introducing a 0.2 ml aqueous sample into a cell and simultaneously introducing both of the luminol and hydroperoxide solutions. Thus, in the cell of Yurow, there is present for the first time a composition comprising three components, i.e., luminol, H₂O₂ and NaOH. Luminol is present at a concentration of 0.0025 mol/l divided by 3 because 0.2 ml of luminol solution is now present in 0.6 ml of solution. There is therefore present in the solution 0.83 mmol/l of luminol. There is also present 66 mmol/l of NaOH, and 29.3 mmol/l of H₂O₂.

From the above, it is seen that the composition disclosed by Yurow is not a composition according to claim 34, because the concentration of luminol in Yurow is less than that recited in Applicants' claim 34. Accordingly, Yurow does not teach or suggest each of the features recited in Applicants' claims whereby this ground of rejection should be withdrawn.

In response to the anticipation rejection based upon Witz, Applicants note that Witz discloses two solutions (Witz, column 3, lines 15-33) comprising:

- 1) 0.2 ml H₂O₂ 0.5 %, i.e., 0.147 mol/l
- 2) 0.2 ml luminol 0.33 g/l, i.e., 1.862 mmol/l + NaOH 0.5 mol/l.

Both solutions in Witz were simultaneously injected (Witz, column 2 lines 44-47) into a test tube containing one ml of aqueous suspension.

In the tube, there is present for the first time a composition comprising the three components of luminol, H_2O_2 , NaOH in the following concentrations (in a total volume of $(0.4+1) \text{ ml} = 1.4 \text{ ml}$)

Luminol : 0.266 mmol/l

NaOH : 71 mmol/l

H_2O_2 : 21 mmol/l

This composition does not include each and every feature recited in Applicants' composition claim 34, because it does not include luminol or H_2O_2 in concentrations as recited therein. Accordingly, the anticipation rejection is without appropriate basis and should be withdrawn.

Regarding the obviousness rejection based upon Witz in view of Spiekermann, Weber and Bryne, Applicants submit that one having ordinary skill in the art would not have combined the disclosures of these documents in the manner set forth in the rejection. However, even if for the sake of argument the disclosures were combined, Applicants' claimed subject matter would not be present.

As noted above, claim 34 is directed to a composition which differs from the compositions of Witz in having greater concentrations of luminol and H_2O_2 .

Spiekerman discloses a composition at page 3, lines 61-65 comprising 0.345g luminol in 62.5 ml of NaOH solution and 500 ml water. Then 10 ml are mixed with 70 ml water. The

concentration of luminol in Spiekerman is low, and any combination of Witz and Spiekerman does not teach a composition with a concentration of luminol as recited in Applicants' claims.

Byrne teaches using between 0.2 g and 5 g of luminol in 250 ml to 1000 ml of solvent. The concentration of luminol is low. Furthermore Byrne teaches sodium carbonate not NaOH. For instance, comparative Example 4 in the present application discloses a Byrne composition. This composition gives a luminescent reaction of 31803 whilst the composition of the present invention gives 37445 (Example 3) to 72043 (Example 2) on fresh blood. On dried blood comparative Example 4 has a value of 32175 compared to 39733 (Example 3) to 73805 (Example 2).

When Byrne used H_2O_2 which corresponds to comparative example 2 in the present application, the value is for fresh blood 31235 and for dried blood 30973.

The result in detection power of Applicants' invention was not predictable from the prior art.

Claim 35 further patentably defines the claimed subject matter by including that the composition has a pH which is lower than 11.5. This pH permits the performing of DNA analysis on the blood after the blood has been detected by the composition. In this regard, Applicants have found that DNA analysis is still possible if the pH of the composition is lower than 11.5. The detection power is, in fact, better at a pH of 12.5, but then DNA analysis is not possible. At a pH of 11.5, it being understood that the lower pH of the compositions according to the invention can be 10.3 (NaOH 25 mmol/l, luminol 20 mmol/l and H_2O_2 100 mmol/l), detection power is still acceptable and useful.

Attached herewith is a Declaration shows that the Yurow and Witz compositions have a pH higher than 11.5, and should therefore not make possible DNA analysis.

Also enclosed is an English translation of a paper from the French Defense Department "The effect of the Blue Star blood reagent on DNA typing". Blue Star is the trademark for the composition of Applicants' invention. Pages 9-25 render it clear that a pH lower than 11.5 is necessary for not degrading DNA after 24 hours.

It is also possible to carry out reliable analysis for the type of blood (system ABO). Also enclosed is a paper from the domestic minister of Russia and its partial English translation. The conclusions show that Blue Star permits the determination of blood groups.

From the above, it is also apparent that the method recited in claim 36 for analyzing DNA of traces of blood at a scene of a crime comprising vaporizing the composition of claim 35 at the scene to produce reacted blood by a luminous reaction through contact of the composition with traces of blood, collecting the reacted blood to obtain collected blood and DNA analyzing the collected blood is also patentable over the prior art of record.

Still further, for the reasons set forth above, the prior art utilized in the rejections of record does not teach or suggest, as recited in claim 36 a method of search and localization of a wounded or struck down animal in condition of reduced visibility comprising vaporizing the composition of claim 34 on areas of terrain where the animal is assumed to have passed in order to produce a luminous reaction through contact of the composition with blood traces left behind by the animal.

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Still further to the reasons set forth above as well as for the additional features recited therein, dependent claims 2-5, 9-24, 28 and 29 are not taught or suggested by the prior art of record.

Accordingly, the rejections of record should be withdrawn.

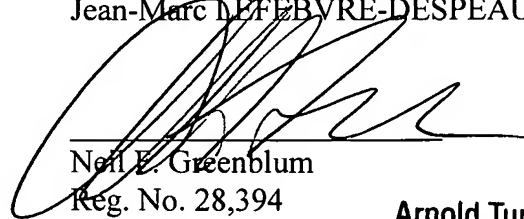
CONCLUSION

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections of record, and allow each of the pending claims.

Applicant therefore respectfully requests that an early indication of allowance of the application be indicated by the mailing of the Notices of Allowance and Allowability.

Should the Examiner have any questions regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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